

Amendments to the Claims

This list of claims will replace all prior versions and listings of claims in this application.

Listing of Claims

1. (Currently Amended)

A An electroluminescent element driving apparatus including a power supply, a controlling IC, an electroluminescent element driving unit, an electroluminescent cell comprised of an electroluminescent element is characterized by that the power supply is connected with a charging unit which supplies power to the power supply, the power supply continually stores electric power while it supplies the power to the controlling IC and the electroluminescent element driving unit, respectively, the controlling IC supplies a flash to at least one electroluminescent element driving unit, the electroluminescent element driving unit transmits a signal having the flash to the electroluminescent cell, and the electroluminescent cell displays the signal having the flash, wherein

said charging unit has exterior interface and pins, (DC+, DC-) the positive interface pin is connected to a resistor (R1) which is connected to the positive electrode of a diode (D1), while the negative electrode of the diode (D1) is connected to the positive electrode of the power supply (BAT1) and the negative interface pin is connected to the negative electrode of the power supply; and wherein

between the said resistor (R1) and the negative interface pin (DC -) are connected with a luminescent diode (LED) and a resistor (R2), between the negative electrode of the luminescent diode (LED) and negative electrode of the power supply (BAT1) is connected with a current limiting resistor (R2), and the negative interface pin (DC-) is connected to the negative electrode of power supply (BAT1).

2. (Original)

A electroluminescent element driving apparatus according to Claim 1, characterized by that the said charging unit is connected with a power supplying unit .

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended)

~~A charging unit according to claim 1, characterized by that the~~ An electroluminescent element driving apparatus including a power supply, a controlling IC, an electroluminescent element driving unit, an electroluminescent cell comprised of an electroluminescent element is characterized by that the power supply is connected with a charging unit which supplies power to the power supply, the power supply continually stores electric power while it supplies the power to the controlling IC and the electroluminescent element driving unit, respectively, the controlling IC supplies a flash to at least one electroluminescent element driving unit, the electroluminescent element driving unit transmits a signal having the flash to the electroluminescent cell, and the electroluminescent cell displays the signal having the flash, said charging unit has exterior interface DC+ and DC- pins (DC+, DC-), it is composed of ~~the resistances~~ resistors (R1,R2,R3,R4), a PNP triode (Q1), a NPN triode (Q2), a luminescent diode (LED), a capacitor (C1) and a Zener diode (ZD);

one of the current limiting resistor resistors (R2), the luminescent diode (LED), the PNP triode (Q1) and the Zener diode ~~constitute~~ constituting a constant current circuit,

the positive interface pin (DC+) is connected to the emitter of the triode (Q1) through a resistor (R2), the positive interface pin (DC+) is connected to the positive electrode of the luminescent diode (LED);

the negative electrode of the luminescent diode (LED) is connected to the base of the triode (Q1), the collector of the triode (Q1) is connected to the negative electrode of the Zener diode (ZD);

the negative electrode of the luminescent diode (LED) is connected to a capacitor which is connected to the negative electrode of power supply (BAT1), constituting the charging starting circuit;

a current limiting resistor (R3) is connected between the base of PNP triode (Q1) and the collector of NPN triode (Q2), which constitutes current passage through the PNP triode (Q1);

the positive interface pin (DC+) is connected to the collector of NPN triode (Q2) through the current limiting resistor (R1), the emitter of NPN triode (Q2) is connected to the positive electrode of the power supply (BAT1), which constitutes a charging loop;

a current limiting resistor (R4) is connected to the base of NPN triode (Q2) and the negative electrode of Zener diode (ZD), the positive electrode of Zener diode (ZD) is connected to the negative electrode of power supply (BAT1), which constitutes the voltage comparison circuit.

6. (Currently Amended)

~~A electroluminescent element driving apparatus according to claim 3, characterized by that~~
An electroluminescent element driving apparatus including a power supply, a controlling IC, an electroluminescent element driving unit, an electroluminescent cell comprised of an electroluminescent element is characterized by that the power supply is connected with a charging unit which supplies power to the power supply, the power supply continually stores electric power

while it supplies the power to the controlling IC and the electroluminescent element driving unit, respectively, the controlling IC supplies a flash to at least one electroluminescent element driving unit, the electroluminescent element driving unit transmits a signal having the flash to the electroluminescent cell, and the electroluminescent cell displays the signal having the flash, said charging unit has exterior interface and pins, the positive interface pin is connected to a resistor (R1) which is connected to the positive electrode of a diode (D1), while the negative electrode of the diode (D1) is connected to the positive electrode of the power supply (BAT1) and the negative interface pin is connected to the negative electrode of the power supply;

the positive electrode of power supply (BAT1) is connected respectively to the positive pin (VDD) of the controlling IC and the positive pin (VDD) of the electroluminescent element driving unit, while the negative electrode of the power supply (BAT1) is connected respectively to the ground pin (GND) of the controlling IC and the negative pin (VSS) of the electroluminescent element driving unit;

the output end (OUT) of the controlling IC is connected to the light control end (HON) of the electroluminescent element driving unit, between the triggering pin (TG) end of the controlling IC and the ground is connected with a trigger switch ~~which can be an elastic one~~, between the inductance incoming end (COIL) of the electroluminescent element driving unit and the positive electrode of power supply (BAT1) is connected with an inductor (L1);

a capacitor is connected between the incoming capacitor pins (CAP1) and (CAP2) of the ~~of~~ the electroluminescent element driving unit;

the output pins (EL1) and (EL2) of the electroluminescent element driving unit are connected to the two electrodes of the electroluminescent element respectively.

7. (Currently Amended)

A electroluminescent element driving apparatus according to Claim 1 2, characterized by that a solar energy power supply unit can be paralleled between the ~~DC+ and DC-~~ exterior interface pins (DC+, DC-) of the said charging unit, the positive electrode of the solar power supply (BAT2) is connected to the positive interface pin (DC+), its negative electrode is connected to the negative interface pin (DC-);

the charging unit charges power supply (BAT1) with solar energy.

8. (Original)

A electroluminescent element driving apparatus according to claim 7, characterized by that the solar energy power supply unit can be composed by a series of solar cells.

9. (Currently Amended)

A An electroluminescent element driving apparatus according to Claim 1, characterized by that the luminescent ~~unit~~ element can be connected to the electroluminescent unit with a connector.